John Biernbaum, Narrator

Anneliese Abbott, Interviewer

July 12, 2021

Location: John Biernbaum's house, Haslett, MI

JB=John Biernbaum
AA=Anneliese Abbott

AA: All right, this is July 12, 2021, and this is Anneliese Abbott interviewing—

JB: Dr. John Biernbaum.

AA: So John, thank you so much for taking the time to interview today. So why don't we start with you giving a little bit about your background in organic agriculture and your specific connection to it.

JB: I just retired at the beginning of this year, on January 1, from 35 years at Michigan State. And the first 12 or so were all related to more ornamentals and greenhouse flower production. And some interesting things happened where I, they needed someone to teach the vegetable course, and I was looking to do something different and volunteered for that. And that started me down the road of, from flowers to food. And there was also a project with trying to rebuild the greenhouse on an Indian reservation actually out west in Nevada. And they were interested in growing edible flowers, so we got funding to do work on edible flowers. And it was like, "Well, we should do it organic, because organic can make more money." And that was kind of the start. And that would have been around '97 or so. And as I learned about organic, it just got really exciting quickly, from how do you just do things to get by versus what organic really is. And the first time I went to the, back then it was the Upper Midwest Organic Farming Conference, before it was the MOSES conference, I think that was '98 or '99, I think it was the tenth anniversary when it was still at the Sinsinawa, before it went to La Crosse.

There were a thousand people there, and I was one of the few academics, and I just was blown away by the organic community and all the questions that were being asked and that I thought I had answers for. And I asked Faye Jones at the end of it, "How can I be involved?" And most people know, Faye, she's a pretty amazing person, and she helped get me involved, and the next year I went back and we started, they started the Organic University, with Roger Blobaum and others had that going. And I got to do organic transplant production, and using my greenhouse information, and it's never stopped since. I think I mentioned the people, that trip out to Wisconsin was about a ten-hour, maybe not that long, eight-hour drive there, and I remember driving there, but I don't remember anything driving home. I was like on a cloud. I was so excited after leaving there and coming back, and my life has never really been the same since that first Upper Midwest Farming Conference.

And then it was coming back to Michigan and learning about who the organic farmers were in Michigan, and learning about OGM and OEFFA and certification, and by '99 the students started asking how come—well, there was a student group called the Michigan

Sustainable Ag Network that I got connected to, thanks to Susan Smallee originally, who was with Extension, and she was part of the team that Dick Harwood put together when he came here from Rodale to be the first C. S. Mott Chair for Sustainable Agriculture in the mid-90s or so. So he really funded the student group, the Michigan Sustainable Ag Network, and that was great because they were all wanting to know about different aspects of organic and sustainable agriculture, and Susan Smallee was putting together speakers, they had a weekly seminar series, and that's how I started getting introduced.

And then it was early one summer, like June, they had a meeting and they wanted to know how come there are student farms at other schools but not here at MSU, and how come we didn't have any organic classes? I went to that first meeting and eventually became a guiding person to help them build the consensus of what it was they wanted. And over a few years we developed the idea for the student organic farm and we got funding from the Kellogg Foundation and the USDA hired a challenge grant, in part because of what the students wanted was some place to learn how to farm, and what I was learning about, because of my greenhouse background and reading Eliot Coleman and Steve Moore, learning about hoop houses and stuff, that would have been I think in 2001 of February is when I went to Maine and saw Eliot's farm for the first time and got to spend a day with him. And realized that that was really the key to making a year-round student farm, because students aren't here in the summer, for the most part, when things are growing, and so it's like, how can you do that, and if you only grow one crop of something, it's hard to learn, but in hoop houses you can do multiple crops, and you can do year-round.

And I didn't know you couldn't do a year-round CSA, and the students didn't know, and we said, "Well, we'll just do a year-round CSA, a 48-week CSA," and we designed that around three 16-week sessions that aligned with the semesters, and off we went. The first distribution was in May of 2003. And again, thanks to the Kellogg Foundation that helped fund some of the hoop houses, and of course the sustainable ag program also, they funded the first two hoop houses, those were built in 2001 to do research on winter greens. I still remember the first couple of open houses we had bringing people in and having them walk into the greenhouses with snow, the greenhouses were all covered with snow, and we'd walk in and we would pull back the covers, and there was all these green crops, and they would start looking around, and we're like, "What are you looking for?" "Well, we're looking for the heater." It's like, "There is no heater." And now this is so commonplace, 20 years later, but 20 years ago it was really big news to have hoop houses, and particularly to have them on campus.

That was really, a couple different pieces that came together between '97 and 2003 to get me really going in organic. And then it grew from there. We started the organic farmer training program or teaching program originally as a certificate program that we got grants to help, and the university helped some with funding. But after three years, unfortunately the university couldn't really figure out how to put some of the tuition dollars back in to help us hiring instructors, and we had some misunderstanding about just what was going on. We were generating a lot of money for them, but so we ended up shifting the program. Let's see, so we did it '07, '08, '09, 2010 we went to a non-credit program, which really made it more economically viable and more hands-on. And the courses still kept going for four-year students, and we still had a lot of four-year students in the courses.

I started teaching the organic farming course in 2010, I believe, and taught it for ten years. And when you teach a course in something like organic farming, that's a real opportunity to learn a whole lot more about it and become, getting more details about, I'll talk more about

that later if you want, but that really led to the next, those ten years of 2010 to—it's more like 2007, because we started the compost course and the organic transplant course and the high tunnel courses, and certification courses, and all that took a lot of time and really got me connected with organic. And through all that time I was getting to go to the Upper Midwest and later the MOSES conference and meet people and learn people, and that was really my mecca of places where to go and where to learn about organic. (8:49)

AA: Well, thank you. That's really cool. So you talked a little about Eliot Coleman; I'm curious who else maybe, or even if it was just him, how he influenced your farming methods or some of the methods you helped teach and promote, and how you chose and developed them, and which people and publications were the most influential.

JB: So let's see, eventually we'll get there, but short answer is that I love to read. I would say I'm addicted to, I often tell the students I'm addicted to learning, and one of the best ways to learn is to teach, which, developing all these courses, but besides reading, I like to also go and visit farms and talk to people and actually gather the information. I think that's what makes you more credible as an instructor. So when that time came to learn more on the details, I was fortunate to be able to get funding. And back in the day there was a program out of Albany, New York that they put on every year, like a three-day educational topic on something. That year in 2001 Eliot wasn't there, but Steve Moore was there. And I got to meet him and hear his talks, and then also it was Blue Heron Farm, they talked about their cold storage methods for having crops to sell over the winter. And it was that three-day presentation, which—I can't think of her name, Stacy—the person who used to organize those, the session, by the time I found out about it it was actually full, and I called her and begged her to let me in, and she did. And then she helped me with travel arrangements and getting people there, and I met Paul and Sandy Arnold, you know the people there in the Northeast that were already doing a lot with high tunnels and more long-term production.

So it was there that I learned I needed to come back and visit Eliot. So I was able to come, and I went to the University of New Hampshire and learned a little bit about the person that was doing high tunnels there at the University of New Hampshire, and then to go see Eliot and spend a day with him on the farm. And it just so happened there was a giant snowstorm the day before I got there, but he spent the morning with me, and then in the afternoon he sat me down in his library and started showing me all this old literature that he had. I think he and his wife Barbara left at some point to go have dinner and to go contra dancing, and he just left me in his house and said, "Just close the door when you're done." So that was a real good introduction to both ideas and literature and to him, and I've been fortunate to be able to spend time with him at conferences, and learn from him, and learn from people like John Jevons, I've been able to spend time with him, in fact he was, Steve Moore worked a lot with him, and when I went to visit Steve's farm in Pennsylvania, it just so happened that John was there, so I got to spend time, and of course both of them came and presented, Eliot and John, were hosted at Detroit and came and did two-day presentations there, so I got to spend some time with them there. They were some of the early starts.

But I also made a point to read the more traditional literature, Rodale's book, *Pay Dirt*, and *Saving Three Lives*, and Sir Albert Howard's work, and I never really read Lady Balfour's, but if you kind of go down the list of books that Eliot recommended if you really want to know about organic and some of the history of it, I went through a lot of those, and I have most of

them still on the shelf downstairs. But also went broader to Masanobu Fukoaka, and the natural farming methods, both the Japanese type and the Korean natural farming. We were talking a little earlier about permaculture, really interested in that, and we started an edible forest garden at the student organic farm. And I got to meet, we had Mark Shepard come, and David Jackie come and learn about them and learn from them, and then in the past couple months I finally took a permaculture design course and got a little bit more background there.

There are so many different types, like biodynamic, and certainly read Steiner and Pfeiffer and a number of those books. I got to go to a workshop with Hugh Lovell when he was here in Michigan and learn more radionics and things that are less common, but other aspects of it. It was just my goal was to be able to pull all that background together and to be able to speak with some authority about the history of it. I enjoyed that a lot. I think you have another question coming up later, there are a lot of other non-agriculture, non-organic type authors that have really influenced me, but we can wait until we get to that. (14:15)

AA: All right. Is there anything you want to share about your philosophies of organic farming and how those changed over time, how you developed those?

JB: The thought I had on the last question, it's like, it helps, if we had one word to really summarize or to kick off a discussion about organic farming, I think I might pick the word "perspective," because it really depends so much on where you're coming from, what your background is and how you look at things. And my training is, I did an undergraduate degree at North Carolina State in horticulture, again mostly related to floriculture and greenhouse production, and then I did a master's degree for two years at Penn State, also related to floriculture and greenhouse production. But really in both cases there they were related to plant nutrition, I worked in a plant nutrition lab at NC State for four years as an undergraduate and got to work on three different PhD projects. So my love of chemistry connected with the plants, and learning about hydroponics. I actually helped my uncle and grandfather build a hydroponics greenhouse in Greensburg, North Carolina. So I knew about hydroponics. At NC State I got to take the graduate level plant nutrition course that Paul Nelson taught as an undergrad, because I worked for him and he met me in the course. And at Penn State I learned from some of the big soil scientists and plant nutrition people there. And then coming to Michigan State my focus was more on a research project related to tricotinol, the chemical that was isolated from alfalfa as a way to stimulate growth, which we should come back and tell that story.

But all that background was in inorganic plant nutrition. And so to make the shift into organic farming and understanding all the different methods was a pretty big shift. But I feel like it was very helpful for me because my early floriculture research at MSU was all around water quality and fertilizers and peat-based media, and we helped the greenhouse industry dramatically reduce the amount of water and fertilizer runoff that was happening just by focusing on how to do things better. The incentive there wasn't necessarily to save money on water and fertilizer, because that wasn't a very big part of the budget, but how to do it, how to protect the environment. I worked on sub-irrigation and recycling water systems.

So having all that background, particularly as it relates to containers and small-scale production, and then shifting into organic, like when I started working on the organic transplants, initially I made phone calls to people like at Speedling in California, and they said, "Well, we're basically using peat-type mixes without any non-allowed materials." And at that point, really the transplants didn't have to be organic. We were just shifting into that phase with the new rule,

started in 2000, then transplants had to also be organic. But prior to that you could use almost any transplant. So it was good timing for me. And like at Speedling in California they said, "Well, we're just using this product called Omega-6-6-6," and I got some of that and learned how to do that. And then one of the organic farmers in Michigan said, "Well, I just use organic peat-based media that I have made with no wetting agent and no non-allowed things, and then I just use fish emulsion. And so we did research with that, and I was surprised to see that just the 5-1-1 fish emulsion could grow plants in peat-based media for months at a time, not just for weeks that you need for a transplant.

But then as I learned more, and learned Eliot Coleman and others, you learned about the role of compost, and that compost would be a much more sustainable way of doing it, and trying to get compost. And the first time, municipal compost I got, and at that time I was still using floriculture crops as my test plant because that's what I knew, and I tried to grow the first organic poinsettias and organic impatiens. And the poinsettias didn't work in that compost, the municipal compost, but I went back and tried it with just adding urea, which is only nitrogen, nothing else. Urea wouldn't be allowed in organic, but would allow me to know what was limiting. And the poinsettias grew fine. So eventually I learned that it wasn't so much that the compost wouldn't work, it was that the compost wasn't old enough, it wasn't mature enough, and the pH hadn't come down, the biology wasn't working.

So all this stuff pushed me into learning about composting, which then gets you to learn about soil and the soil food web and the whole cycle. You couldn't really buy good compost, so we started making good compost. And I had a different approach to things because of coming from a different perspective, I didn't, I was used to buying stuff and paying for things to grow plants, and it's like people seemed to think that compost was something that you only made with waste stuff. And I started buying hay and straw and a little bit of reed sedge peat, and things like corn silage, and we could make great compost that would work as a transplant growing media, either with or without using peat. But we just had to spend a little bit of money. But the amount of money that you spent is relatively small compared to if you were going to buy potting mix. So the economics were there. And it's just like that whole perspective, that was how I came into organic more through the greenhouse, through the pots, through the transplants.

And then the high tunnels the same way. It's a covered area. And people were, you just had to learn that you didn't want to overdo the system because it was a non-leaching system, and much of my work I mentioned in the early floriculture stuff, it was a leaching system, and they just put on so much excessive fertilizer because they could, and because it was free—well, not free, but it was low cost. And that the shifting to the non-leaching systems and using less we could demonstrate you just had to use less fertilizer. And we could show that there was a relationship between the quantity of water applied and the quantity of fertilizer applied, and if you just reduced the amount of water, you could reduce the amount of fertilizer. (21:37)

So all of that came with me into the transplants and teaching people not to leach or overwater transplants, like many greenhouse growers were taught. And then how to find local materials, it just didn't make sense to me to be bringing in bat guano and minerals and things. We did some work that was funded by the Organic Farming Research Foundation about looking at different additives, did they work or didn't they work, just carried that into the high tunnel work. And one of our first comparisons was compost versus alfalfa meal. And it's like, the alfalfa meal would grow the lettuce and the crops well, but the soil started getting compacted because we were surprisingly breaking down the organic matter. Whereas the compost treatments, we didn't have that problem. So we learned that compost was really a good way to

keep the soil in the high tunnels going because you need the organic matter, but you don't want too many nutrients. So you don't want a manure-based compost, you want a more leaf or straw or hay-based compost, we would say a plant-based compost.

All of those things come together to help my understanding of organic. And it wasn't so much that traditional, you know, has to be in soil, has to be this way and that way, it took me longer to learn that, but I would go to the conferences, and I would go visit farms, and eventually put together the story, partly to be able to tell it when I was teaching it in the organic farming class, but also to be really able to help new farmers. And we actually trained a lot of very successful young farmers through the program on campus that are now still out there farming here in Michigan and across the US because of pulling together all those bits and pieces.

I guess the one other part of the story as it came together was the task force, the hydroponics task force, I got to be on that. And it was interesting to look at the strategy of how they tried to argue that hydroponic organic just didn't make sense. But to me, from where I came from, I could see the story different than some of the other people, like Dave Chapman. They're still working at trying to get the USDA to understand why that doesn't make sense. And I offered a different perspective, is that when I started in the '90s, I read what the proposed rule was going to be, and I read what it said, "This, this, and this is allowed," peat is allowed, these are allowed, and I started growing edible flowers for the full length of the crop in those methods in the greenhouse, kind of the same kind of methods that the people who shouldn't be doing it out in California doing the blueberries and the strawberries, you know, Driscoll's and that kind of stuff. It's like, because we were told that that was okay, or it seemed like that was okay.

But then as I went to conferences and asked, we were told, "No, that's really not what you should be doing," that that is intended more just for growing transplants, because it's not intended for growing crops all the way to harvest. But that was never written in the rule. And that's still a big problem with the rule. When they wrote the rule, they said what they thought needed to be said, but they weren't accurate enough and they weren't specific enough to say that, "yes, you can use these things, and you can use peat moss and perilite and vermiculite, but you can only do those things for growing transplants." If they would have just said that. Or even later, when we had this task force, if someone would have just spoken out, "These methods were intended for this phase, they weren't intended for growing crops all the way to harvest." Because it was never said, so people who were growing those crops were just interpreting the rule that wasn't accurate enough. (26:08)

Another example would be, when the task force on greenhouse production, there was supposed to be a whole rule, which there never was really a rule on greenhouse production, but there were drafts of what that should look like. And one of the lines in the draft said, "Lighting is okay." And that would mean to me like supplemental lighting, to use high-pressure lighting to supplement sunlight would be okay. Or you could, I remember talking to Eliot, like, "Could you use what we would call night-break lighting in the greenhouse, where we light in the middle of the night to make long-day plants or short-day plants flower or not flower, use it to control flowering?" That's when I got introduced to the idea of the slippery slope, about being careful about what you do and don't allow. But because they didn't, they said, "Lights are allowed," but they didn't say, "Only as a supplement," or "Only as this," you have people growing plants in warehouses with 100 percent supplemental electrical lighting and calling that organic. Which is totally absurd. But it was because people weren't accurate with their words, and they weren't specific enough about what the exceptions were that we have this problem now with the hydroponic organic and growing organic in warehouses with all lighting.

And that's an important lesson that I learned that I tried to share in that committee, I don't think I ever really got heard, and maybe I didn't say it loud enough or well enough, but I think it's really important going forward. The question here was kind of, how did I learn about organic rules and stuff. And it's like, the rules are written, and I interpreted them from my perspective as someone coming from outside of organic. And what I was doing made sense. But then when I got to people from more within organic, and the history of organic, and they explained to me why it didn't make sense, okay, I stopped doing that. And I did something else. Like I worked on making the compost where you could grow and you don't have to fertilize all the time. To me, that would be a measure of how well I can grow a plant in a container with a compost-based media and not have to fertilize it for two months. That would potentially be a way of growing organically in a container if you wanted to indeed allow that. Some people don't want to allow that at all, which is okay by me.

But unfortunately we made the shift in the '90s to writing the rules, there were a lot of good people that I got to meet that were working really hard to do that. And the same thing, we could go into the livestock rules. But it just, they weren't guessing or interpreting what the other side was going to look like. And that's what I've kind of made a career out of anticipating how somebody else might look at things differently, somebody from a different perspective. And that's what's happened in organic, the people with the economic perspective, "We just want this to make money," it wasn't an ecological perspective. They did their thing. And we still I think need to figure that out and understand that as we're going forward if we're going to really recapture what organic was intended for. Does that make sense? (29:40)

AA: Yeah, it does. And that ties in a lot with the other question I was going to ask about your perspective on organic certification. I feel like you covered a lot, but is there anything else you want to add on that one?

JB: Again, it was great for me as an academic to get the experience of certifying a farm. The first farm that I ever, it was a big experiment, was actually like a three-acre apple orchard on a research station. And I was not involved in the early stages of that project, but then I got invited to come in, and then at one point I was put in charge of overall managing the project. And part of what I did there was to get it certified, which, it was the farm at the Kellogg Biological Station maybe was certified before, someone else worked on that, but the organic apple project at Clarksville was originally certified by OCIA, and it was for quite a few years, and then later I was the lead for getting the student organic farm certified by Organic Growers of Michigan. So getting that perspective of talking with the inspectors and talking and learning about the rules. And back then, prior to the USDA coming in, the inspectors and the certifying agencies had a bigger role in education. The role of education and certification was split when the USDA did the NOP.

But that, having to actually do it and see all the details and do all the records was very valuable for me. So when I went to teach it, I could say from actual experience that, "Well, we originally started keeping our records this way, but then I learned that the inspector wanted to see them, and they wanted to be able to see multiple years," so it's just a matter of how you set up your spreadsheet could be more effective once you know what the inspectors want to see and how things are going to be and what the rules are. And I think it's that process, there's so much that's good about it and works, and it's just some of these finer details that weren't able to

evolve. And it's the risk of getting involved with a governmental agency. And it's the same thing.

It's not surprising to me to see the people in the USDA looking at organic quite differently than what traditional organic farmers did. I've experienced that firsthand, how I looked at it differently from the perspective that I came from versus how I was able to adapt. And at MSU, and a lot of academics, you get trained to question more when something new comes along, the attitude is often more, "Well, prove it to me!" And to me, that's not very effective as an academic. Our role is not to put the burden on somebody else to prove it to us, our role is to be involved more in how to prove that. And it's like, the simple difference that when I came to organic, I mean somebody would say something, a farmer would say something that I saw differently, I always started out by assuming that the farmer was right. Even though I didn't necessarily agree with what they said, let's assume that they're right, and then let's ask questions about why are they saying that? Why are they doing that? And how are they seeing things? And often then that would allow me to say, "Okay, I understand now why you're understanding that and why you think that that's what's going on. And to be able to say, "From what I learned, I would see it this way," and then offer that different perspective. And that, I think was valuable both to me and to the farmers. And then in discussion or dialogue you were able to come to more common ground. But if an academic or a scientist comes in thinking that they have all the answers and you have to teach, they want somebody else to show them why their perspective might not be broad enough or accurate enough, that caused a lot of problems I think. And as academics came into organic, partly enticed by the research dollars that were available, and I saw colleagues here at Michigan State. At one point we had a meeting on campus with 40 people, 40 faculty and staff who said that they were associated in some way with organic projects. And a lot of them really were. But the motivation there often was the potential for funding, the potential. But they didn't make the commitment to accept organic where it is and learn that I did. I think that's why my approach to organic was, I would say more long-term or more successful, is because of taking the responsibility to find out if something were right or not, not trying to put that responsibility on someone else.

And it's so often that farmers had good explanations and good reasons for why they thought that they thought. And often it was just based on an inaccurate or incomplete perception, maybe here's a good point that I've given in almost every talk I've given in front of organic farmers, it's this idea of what I learned from Ken Wilbur as part of integral philosophy is that three key steps. One is to recognize that almost every idea has some value. So someone shares their idea, the first thing you do is not to say, "Oh, that's stupid" or say what's wrong. You start by looking for what's right, or what's common, what you can agree with. And then the second key thing is that most ideas are incomplete. So rather than saying that they're incorrect, which is what most academics will do, that's not right, it's like, well, if you think that you might be missing some pieces, or it's not necessarily complete. If you could just see it the way you're seeing it there, that does make sense, but if you add in this piece of information and this piece of information and this piece of information, you can start to see, "Wow, maybe that doesn't make sense," and why we might need to look at it a different way. (36:58)

So that really again continues the pattern. And so many ideas in organic initially were incomplete. And that wasn't anybody's fault other than that there wasn't research. And I will typically say that my experience is that any time there has been research to test organic ideas, organic has always held up to the ideas. It's just a matter of getting time to do the research.

But the third key thing that's really important is that any idea, no matter how good, if taken to an extreme, can become pathological or can become harmful. And that's true with organic. It's like, we can say organic matter is good. And I don't think I've ever encountered anybody, no matter what type of farming that they did, that didn't agree that organic matter was good. But can you overdo organic matter? The answer clearly is yes. You can overdo organic matter, particularly, in order to really understand how, you have to understand that there's different types of organic matter. And that's an example that I think is missing in much of the way that organic is presented. Not by everybody, but by many, it's like, "Well, we just want more organic matter." That's true, but it's incomplete, because you need a proper balance of the four different types of organic matter: the living, the dead, the really dead, the really really dead, which I learned that at conferences from farmers, and the language that they used. But now there's research to back that up, that there's different types of organic matter. So if you put too much fresh organic matter on, or you plow down too much green cover crop too deep, then organic matter is not helpful, it's harmful. And that's where understanding that third thing, that you can do too much, even though things like organic matter helps you to create a more integral system.

And it's like, when I've written in support of organic agriculture, in 2006 I gave the keynote to the Michigan Organic Conference, and what I worked on developing was the idea of, if I was to take organic farther, I would call it integral agriculture. Because organic sometimes can put too much emphasis on the soil, that there is so many different parts that you need to be successful. And that's coming up with the whole idea of soil health and plant health and how do we get plants to be more resilient to, or tolerant of, pest damage and the things that John Kempf and others are doing with the plant health pyramid. They're really putting ideas out there that are testable. But if you just overdo the emphasis on the soil without thinking about the broader picture and about the human perspective, I think sometimes that's a limiting factor for organic. (40:22)

If you don't mind here, I'll go on a little story that tends to support that. This is in the beginning of 2020, though things hadn't gone south yet with the COVID, and I got to give a presentation at the Northern Michigan Small Farms Conference and at the Ohio Ecological Food and Farming conference. And that was my attempt to develop something around integral agriculture, and how do we get more people to accept organic agriculture. And I started by showing information about the soil, and said that we also really need to understand about how plants work. I explained and took some of my time on plants, I only had 90 minutes to do this. And then I said, "But it's also helpful to look at how animal and livestock agriculture works." And then the last part of the talk I tried to pull out the common themes of, "What do we see that's consistent in soil and plants and animals?" Ideas like diversity, and the importance of water, and the importance of balanced nutrition, and how we can look for these common themes and develop that. And then mostly bringing it back then to human health, that it's coming now, but in the early parts of organic, there was an underlying theme, but from my perspective it wasn't brought up enough yet.

And so there, if we look at organic health, particularly as you look at the balance between physical, mental, emotional, and spiritual aspects of the broader aspects of human health, that you get to start seeing this bigger picture. And to me, if we want people to accept organic and the importance of sustainable and a different kind of agriculture, a non-chemical, non-destructive agriculture, that we need to get them to think more about their own health. And so people like the Bionutrient Food Association is doing more about nutrient dense food. And you have Daphne

Miller who gave a talk once at the Small Farms Conference here, she is a doctor, MD, and she wrote the book on ecology. But she showed a picture of the root rhizosphere and all the microbiology around it, and then the gut microbiome, and how these two things were similar. For me, that was like this giant light going off. And myself, I've been working on trying to tell that story better. Like Zach Bush is another person who's an MD who I've heard him at the Bionutrient Food Conference.

I have, I came home after doing those two talks and started on a PowerPoint trying to put down all my different ideas. And I went from the 120 slides that I managed to cram into 90 minutes to I'm over 250 slides now. And as I developed each of those separate stories into what would take about 6 hours to present, I finally came around to the conclusion that for the average person who doesn't understand organic agriculture, is we should not be starting with trying to explain soil to them, the living soil. We should be starting with helping them to understand different perspectives on human health. And then go backwards to the soil. We're going to have to, if you're human these things make you healthy. If we look at the way we're treating livestock, and my point that I wanted to try to get to eventually is that we're all one. That's what we really need, I think to get over the separation that people have and why we do agriculture the way that we do. (44:47)

There's another rant or story about having to overcome the biblical creation story, in my mind is probably one of the biggest detriments that we have to understanding agriculture and who we are as a people. But if we can get, if we look at what's healthy for people, we can look at, why would we treat animals that way? And then it's like, why would we treat plants this way, and why would we treat the soil this way? And kind of work backwards than the way many of us are doing now, which is starting with the soil and then trying to work up to human health. So that's kind of where I'm at. And at some point here I need to get back to the computer and work on telling that story and try to record it.

But it's just hinting about this perspective and accepting ideas and knowing when to challenge an idea and how to challenge an idea using facts but also using experience. When a farmer talks about an experience, I always listen to their experience. And they might not have the same explanation that I would have about why it works, but that's not important. The most important thing is that they will listen to their observation about what they see happening. And then work together as a team to try to understand why. So there's the what and the why in getting that process. You're probably going to have to stop me and rein me back in here, but it's just to me so exciting about what the possibilities are here and that there are a lot of good things happening between the Real Organic Project and the Bionutrient Food Association and John Kempf and his organization and just others around the country and the world that are looking at this better, coming back to more of the IFOAM principles, it's not just about soil, but it's about the health, ecology, the fairness and care, is what we really emphasized in MOFFA more, that broader definition that includes more people. And I think that's where we were, organic and certification, it's kind of lost the people part of it, trying to focus in on what can you certify and what can you write down in records.

I think we work towards this broader definition of organic, even broader than what Real Organic is trying to do. And that's, my name for it is integral agriculture, which would bring in body, mind, soul, spirit as well as health, ecology, fairness, and care. More long-term traditions of, even the simpler elemental traditions of earth, water, fire, air. I think we need to get back to. And that's where I'm going more in my teaching, is how do we connect the individuals so that they can realize that we're not separate, humanity wasn't created in some separate event, we're

not the center of the universe, we're part of this one whole thing, and how do you get them to do that? A simple way is just to get somebody to plant a seed, or get their hands in the dirt. And I've had enough experience to see that if you do these simple things, it's pretty clear what's going to happen. It always happens that you get this awakening of a person, and with the right guidance or help to cultivate that emergence of this connection, sometimes through meditation, sometimes through getting your body healthier, do things like yoga or other, many other practices, music, dance, song. You just start with the physical human health and then you work back to see this giant connection. How does that sound? (48:36)

AA: All right, great, that is a lot of detail. Thank you. So, I want to make sure that we have time to get to whatever you are comfortable sharing or want to say about MSU and your perception of the relationship between the agricultural universities in general, but MSU in particular, because that's where you were, and organic and sustainable agriculture and some of the challenges or difficulties that have been there, and also how you've seen that change over the years.

JB: I may try to frame it here in the perspective of helping others who might be at a university or running a student farm or organic research or getting into that, what I learned and what might be helpful to them. And again, I've already I think done a decent job of explaining how when I came from left field and didn't really understand what was going on, I had people take me under their wing and help me. Dick Harwood and Susan Smallee. Dick Harwood was super busy all the time. He had so many different things going on. But he would occasionally take time and pull me in his office and show me this, this, and this. "Look at this, John, look at this!" And Susan Smallee would help introduce me to people. And when I would go and talk, like some of the first talks I ever did with organic farmers, I could realize somewhat after the fact that I wasn't connecting, I wasn't really there yet. But I had people come and, not criticize me, or try to fix me, but more explain to me different perspectives.

You mentioned someone else you're going to talk to, Joe Scrimger here in Michigan. He was someone that helped me really early on by pointing out to me how you could see things differently. So this same idea I was just sharing about how I've learned to accept people, I should give credit to that I learned that a variety of ways, but in part because it was modeled to me here in Michigan as well as at the Upper Midwest and later the MOSES conference, where someone would come up and just share, "You were talking about this, John, and I had this experience, and it's kind of like yours, and I kind of explain it." So finding people to be mentors is one thing. And I was very fortunate here at MSU, you mentioned earlier today you got to talk with George Bird, he was another person here that really helped me meet people and see people, all those early things. I think it was 2004 when MOFFA recognized me, a public service award I think it was, that it was a combination of appreciating all the effort that I was making and the growth that I was doing and all the learning that I was doing to really become part of that.

So that is part of the story. Within MSU, I got advice over the years. It's like some people in academia, it's like, if you really want to get the big rewards, you have to do a lot of publishing, and you have to be a self-promoter and get people to see what you're doing. But another strategy that I learned more was how to fly under the radar. Which is how to do what you need to do and not necessarily draw attention to it, particularly if you're going against the flow. And that, the student organic farm, that was more the strategy that I supported and used. And it was, for me, trying, the students wanted to do this, and I wanted to help them, but it's like, there were things that they didn't understand, and oftentimes it was me explaining enough or getting it

enough, it's like sometimes people have learned the strategy of how to get someone else to think that your idea is their idea, and it's like, "Yeah!" and you just agree with them. So we spent a lot of time sorting through all of these different ideas that the students wanted and narrowing it down to what we could do and accomplish.

And we just did it out of the student organic farm, again with initial funding. There were others, a few people who really saw what we were doing that helped us, like at the Kellogg Foundation back in the days when they started the Food and Society Initiative. It was funding from that that helped get us the first $100,000 that really helped start the student farm. And almost all that money went to labor, I was very good at doing things with a minimal amount of investment in materials. But we got up and running, and they wanted a plan for how we were going to keep running. And over those first four years we invested about $100,000 a year, or about $400,000 total from five or six different sources, including sale of produce, so that by the fifth year we were making $100,000 a year, and we could keep the program going. And we met that goal that they set, "We want you to be able to do this and fund this." And I, my approach was more to just keep doing that and just be self-sufficient. (54:24)

We have not—just a quick sidenote—talked very much about even how I got in there. I kind of meant to talk about that. But a lot of what allowed me to be open to organic and to new ways was involvement that happened to me in the early '90s with the Native American community here in Michigan. And again I got accepted into a culture, a community where I was different, more the minority, but was guided and taught. And I've had a chance to go to powwows, and eventually dance at powwows, and see things in a different way. And it was bringing that, thinking about how to be self-sufficient, and just do it without bringing a lot of attention to it. Because in the beginning the students were wanting to do all kinds of weird things, and it was probably better that we *didn't* bring too much attention to it.

But then at some point some of the people at the student farm felt like we had to get funding from the university and we had to become a bigger part of the university. And my perception in hindsight is that that was the beginning of the end. The student farm has been going down kind of since then. And it was like, we met with administrators, and the administrators' idea was, "Well, do you want to be a project *of* the university? A project *in* the university? Or do you want to be a program *of* the university?" And it's like, what you learn over time is that for them to invest in you, it's they want stuff from you. So they want you to go do organic overseas, or they want you to do this or that. And it's like, no, we need to do this here now. We already know. I wasn't looking to get more responsibilities, I was looking, if anything, for them to help us. But that's not how the university administration works in my perspective. At least recently.

When I talk about this, I try to differentiate between a leader and an administrator. When I started at MSU 35 years ago, there were leaders that were in positions of responsibility. They understood how to look at the big picture, how to give people equal opportunity, that they had to enforce a certain set of rules or expectations. But they had to do it fairly and across the line. And for more than ten years, I don't see any—I want to be careful how I say this—when I describe this in generalities, I try to apologize first to the people that don't deserve to be characterized this way, they're actually doing it right, because there are some people that are doing that. But in general we have administrators in the university and in many other places, it's not just at MSU, and they are people that were lifted up into higher responsibility positions, not because they necessarily had leadership skills, but because they had performed well as a researcher or something else, and they get moved up. But an administrator, they can follow rules, but basically they take care of themselves, and they take care of their friends, and they diminish people that

are contrary to what they perceive as the goal. There's not this acceptance of diversity. A leader understands that they have to apply things equally, and that sometimes they have to do things that their friends don't like. And I don't see that in the university anymore. I saw people that, eventually if you don't play along, you get punished.

And I had that personal experience of getting to the point that the farm that I worked so hard to start and to keep a low profile and such, I was told—in a meeting where they told me I can't tell anybody about this, what's happening—but that supposedly I was accused of creating a toxic work environment, where after working with hundreds of students over decades, I never had anything anybody ever said that, but supposedly this is what happened, and that I was no longer allowed to be a part of the student organic farm. And again, that became, I didn't really know how to deal with that. And so I retracted. And in hindsight I might have fought it differently, but it just, I decided to move on. Well, I did fight a little bit, I went to—in the university there's a system called the Faculty Grievance Officer, if something happens you go talk to them, and there's ways to help—I did that eventually. And he looked at me really weird, he said, "Wow, that just doesn't sound good." He said, "Let me go find out." Two weeks later when he met, he said, "You should do what everybody else does when this happens and just ask for money to start something new."

And that's what I've learned over time, is that people that do things that the university doesn't like eventually get dealt with, discretely or not so discretely, and I've seen other cases of it now, people around me that that happened to. So I originally thought about asking for money, I said, "I'm not going to get any more, not ask for any money, I'm not going to do anything more than what I basically need to do." And I did my teaching and did my stuff, and I started moving towards retirement, where I am now. And I'm not, it's just something that I'm sharing more, not to try to degrade or to punish anybody at MSU, it's just more to help people see a perspective. And I admit that I could be totally wrong about this, but I saw the effort to diminish the student organic farm and organic at MSU, and there are other people. I know a real good researcher who was the organic pest management person and was getting lots of money and needed more lab space, and didn't get more lab space. And he got frustrated, and he went off in different directions, did less, too.

And it's like, it's how I see from my experience, that when you had a Dick Harwood here in the sustainable ag position, and others, people can see the benefit of it, and there was value there. But when you go to organic, and organic does not allow GMOs, and the majority of where many universities are in agriculture are they're going to save the world with GMOs, which is totally flawed thinking for such a, incomplete thinking I'd say, for so many reasons, that this is just not going to happen. But the fact that organic does not allow and speaks against GMOs is a big problem. And it always is going to be a problem. And it's just, they won't necessarily say it, but I think that's part of what needs to be discussed. (1:02:01)

So we went from lots of strength and lots of excitement within the university about sustainable, and then organic to a point. But what I've seen in the last five or six, maybe longer years has been more decline. There just, it's a lot about getting the money and getting the publications, not so much about the big picture or different things. And I hope at some universities that that's different, but the student farm has been diminished. The ones that were left still kept asking for some money that the university would invest, like many farms across the country they have at least one position where the farm manager is funded by the university. Because then you have the consistency that's necessary. And I provided that consistency for the first ten years of the farm, the memory that's necessary to help keep things going and help keep

an eye on the budget. And as I went off to do some other things that I thought was helping the farm, and I wasn't watching my back, I became less a part of the student farm. And that's where again just different people seeing things differently.

And it's funny, today I just got an email from a student like an hour before you got here that kind of amazed me, but it's someone that says, "You know, some of us that are historically from the farm in the past are getting together, and we're very unhappy about where the farm is now because it's becoming more a business. It's not a place where students can come and learn and where things can happen." And that was what we, I worked so hard to do is walk that line of, it had to be economical, but it also had to be a place for experience and emergence, where things could go wrong and stuff like that. And they can't afford to have anything go wrong out there now because the few people that are working there on a shoestring budget are trying to keep the CSA going and trying to do things. And they're making, I was, for the first time in five years I was on the farm, and I tried to help them with something, and there were just some pretty serious mistakes being made that I had this expertise and I'm right there, but I'm not allowed to be there helping them. And that's again the craziness that MSU is academia. But I'm glad to hear these students are recognizing it too and wanting to kind of do something about it. And so we'll see what happens about that, stuff comes and goes. (1:04:45)

Let's see if I can summarize. The overall thing was thinking about what's going on, particularly in the university system, and I tried to explain again particularly the difference between leadership and administration, the idea of the big picture of what's going on, and being accepting of alternative views. And it's like, that's so much of what our culture is dealing with right now. It's not—I'll try not to be political here—but it's not about making America great again. That particular group to me is about making America white again. And it's just like limiting diversity. Diversity is scary to people, and organic farming is about diversity. It's about the bigger picture, connecting with nature, protecting nature. And that is scary to some people. And so that is where I feel we have to come back around and start with people at the very beginning.

One of my key teaching things is always, start at the beginning. And that's, I'm afraid we're not doing enough of that. We're telling people about organic food, but we're not really helping enough people see their health, and partly because they don't have time, they're so overwhelmed by so many different things. But we have to kind of get back into people who we are, how do we start.

And I'll tell a little side story here again. Organic farming in the last five years or so, I would present a timeline, which I want to, I know you're really interested in history, I'll show you this timeline. And I can do kind of like the last 150 years. But before I did that, I did the last eight to ten thousand years of, we would say agriculture. But then I would show one of like the last seven or eight billion years, kind of since we say the beginning of the solar system and what's going on. Part of telling the story, before I told too much, I asked students for the last three or four years, "How many years ago before did people like us become present on the planet Earth?" So people you would think of as more as human. And each year, the first answer that someone raised their hand and called out was, "10,000 years." And I asked the class then, "How many of you would agree with that?" And at least 30-40 percent of the class would agree with that.

To me, that's one of like the scariest things possible, to think that college-aged young adults think that humans have only been on the planet for 10,000 years. We know, it keeps getting pushed back, they would say 100,000, now it's four or five hundred thousand or more

that people like us have been here. And it's only again this experiment of agriculture the last ten thousand years. And it's like, we learn about how much culture is related to agriculture. But I was amazed, five, six years ago, reading one author that talked about, "Why don't we talk about the use of fire to cook food?" Because that was more, that was like 100,000, very long time ago, maybe perhaps 100,000 years ago, and *that* had such a huge effect on the development of humans, like the idea that we don't have to have, and I don't know whether this is true or not, but I think it's really exciting and needs to be looked into more, is the smaller jaws, because we didn't have to chew things up so much, and that allowed for more room for the brain to develop, more things for humanity to develop, and how this bigger picture of where we came from, who we are, the connectedness. And that's where again with Wilbur and the ideas of spiral dynamics that we evolved as a culture—I don't even know where we are timewise—

AA: We're doing okay.

JB: So I'll try to bring this, the culture originally was more based around muscle, Atilla the Hun type thing, and then it was magic, kind of the—more around magic, and then around mysticism, and then eventually we got more to monarchy, and then to the mental—that there was a development of culture and how people were managed and controlled in a sense. And it hasn't changed too much, but science and intelligence is good, but it's like, it has its same limitations of using things to control people that religion and magic did, and that monarchy did, and that the medicine man did.

And we just have to think about this evolution and that as a culture we evolved that way, but individuals, I've been taught and accepted as a reasonable teaching is that each of us goes through that sequence as we grow and mature too, about how we look at how the world is controlled. You can get stuck in one of those things, and a lot of people are stuck in a developmental phase. And how do you get them to move on to the next phase, is not to educate them, or not to beat them up, but it's to honor them and to respect them where they are first and build confidence in them so that then they can grow and see other things and see new things. And this is some of the theory around how do we get people to be more ecologically conscious, how do we get them to be more green, is we start by honoring them where they are, and then helping them to see possible differences and biodiversity and all these things that we're learning about how the earth really works. And again, we just get stuck.

For me, one of the biggest stories is that I would really encourage people to learn and that really influenced me is the story *Ishmael*, by Daniel Quinn, which was published around '92 or '93 and it won a big award, the Turner award, a book that really helped me see things differently. Quinn looks at the whole story of the start of agriculture and the biblical Genesis story and Cain and Abel and who are we and how did we get to this point. His later book, *My Ishmael*, which was a sequel written at the same parallel time but from a different perspective, he talks about the leavers—well, even in Ishmael he talks about the leavers and the takers, people that are, there was a culture to leave things as they are, just you're a part of things, and you take just what you need, versus the takers, which are, it's all about greed and fear and take everything. And that's what we're dealing with today. And he really does a great job of introducing the ideas, and they need to be expanded on. But how do we think about people, and how do we get them to try to not be afraid? (1:12:25)

And in the university, it's tough to have those discussions. When I got introduced to all this stuff in the '90s and got so excited about spirituality and started reading Ken Wilbur and

really got an academic language for how you could talk about spirituality, I tried to do that. And I learned very quickly that that is not a topic that you try to bring up much within the university, that people are just really scared of it, because they think you're talking about religion. And it's like, how does all this related to agriculture and sustainable ag and organic? I hope people can kind of see the clues, or otherwise I'm not doing a good job of telling the story here, but it's like, we just need to get back to the beginning of this and who we are and where we came from. If we're going to put this together and save—I don't like that phrase, "save the earth"—if we're going to be a part of the earth continuing, we just need to remember who we are and open up. And part of that is through agriculture.

I mean, we're not going back, and that's the whole, like where permaculture comes in in some of these broader ideas, we're not talking about going back to just hunting and gathering, but we certainly need to bring forward the ideas of hunting and gathering, what that was, and how we can live within a system, and that we're not unique, we can't just keep growing the population forever and ever, that we are subject to the same rules of ecology and of nature that every other living organism is, and we've been brainwashed to think that somehow those rules don't apply to us and we can just keep reproducing. And, oh, we'll just go out to the planets out there. It's like, someone just needs to start smacking people and like, wake up! There are these sets of things that we're a part of. If we're all one, we need to follow some basic rules, and we've lost that.

And I think looking for authors and teachers and guides, people that can help bring these all together, and I'm going in the direction I was advised back when I was figuring out the student farm and talking to mentors, they said, "Don't worry about trying to change the mind of old people because they're just going to get old and die. Focus on the young, and the youth." And again, you have to be careful with that statement, it can be incomplete also. But just as a general idea, focusing on those that are still open to new ideas, the youth, and then the elders that get it. And how do we tell a story and bring this back and make it simpler and keep it practical so that we can be healthy and happy and not just humans, but life on earth, including all the biology in the soil. And we can keep the soil on the planet and the water in the ocean and animals, fish, aquatic life in the ocean. It's really an exciting time to be alive, because we're really at this big challenge here right now. And I'm hoping that some of what I'm sharing here might help somebody else learn. It's like, you learn from people that have been down the road before. And that's how I've learned, and I'm trying to pay that back, or pay it forward, however you say it, to others. The stories are there, the information is there, you've just got to find it from either people, from reading, or other ways, which may be a good closing thing, understanding how people learn.

When I do the online classes, I have them do something called the VARK analysis, which you can find online. And it helps you to understand whether you can learn better by visual, is the V; auditory, is the A; reading is the R; or kinesthetic is the K, if you learn by doing. So much now, when I have students do that, when they come back many of them are multi-modal learners, so they can learn different ways. But so many of them need to be doing in order to learn. And I think that, I learn by reading, I'm good at that. And it took me a while to understand that not everybody else learns like I do. I've had to adjust my teaching. And when I teach a course, I try to give parts that are more visual, parts that are more auditory, parts that are more reading, and parts that are more kinesthetic so that you're working with all types of learners. And we really need to be thinking about that in organic farming and in our education going forward, that we

target our teaching methods to the learning styles of those that need help. And many of the youth need hands-on practical methods.

So the idea of a garden at every school—sorry, I'm going off on another tangent here—but what gave the strength and the ideas to do the student organic farm, and I wrote about this in the chapter about the student organic farm that's in the book *Fields of Learning*, is the two books that—again, a friend and mentor Laura DeLinn pointed me to—one was *Reclaiming the Commons* by Brian Donahue, and the other was *Farms of the Future Revisited* by Schreger Golin, Steven McFadden [?], this idea that every town, just like they have a soccer field and a school, should have a teaching farm. It should be associated with the school or somewhere, it could be separate even, but a farm where kids can go and see and learn about maple syrup and apple butter and all the seasonal things. And that's what they did at this farm in New York that the *Reclaiming the Commons*—excuse me, Connecticut—that the *Reclaiming the Commons* was about, a farm outside of Boston.

And it's like, but the other idea, that how are we going to keep farms if farmers, in order to retire have to sell the farm? Like that just is not going to work. And I think it was Schreger Gollin and Steven McFadden [?], they talked about this idea of putting farmland in the public trust, public or private trust, so that when a farmer gets land, and it's there, and they don't have to be paying for the land, and then maybe some of the tools and equipment are there, so that they have more opportunity to put money away for health care, and to send their kids to college, and to retire. And then when you're done, you don't have to keep working beyond the time when you want to work as a farmer, because you get worn out when you're like 40 or 50, and we see people like that, real good farmers, like—I'm forgetting the two names right now—but who shifted more to consulting and teaching instead of farming, but they had that experience. Because the type of farming that we're talking about, you can only do it for so long. And you need to be able to move on to something else. And if the farm is held publicly, and a board to help find a good farmer for it, it's just a different way of thinking. (1:20:15)

It's this reading, these other alternative ideas, that are going to allow us to go forward in the future. The ideas are out there. I got a little rushed in that last part, I don't know if I explained that very well. But there is hope I think for the future if we work together. And part of that story is, as soon as you talk about land held in public trust, somebody says, "Oh, you're talking about communism or socialism," and it's like, "No, not necessarily." These are systems that can be worked, there are examples here in the US of this happening. But we've got to do something, because we don't want what's-his-name, Bill Gates, buying up all the farmland. If he wants to put it all in public trust and put it into farms for people, that would be a great idea, but I'm a little nervous that that's not necessarily what he's thinking about doing. But that's the kind of thing we need people, wealthy people, to be doing, is the buying farmland and then ensuring that it will always be farmland and there will always be farmland available. And having farms, like the student organic farm at every school, so that there's going to be a few young people that are going to get to see what farming is, and that they're going to be farmers of the future. I've got it all figured out. Someone just needs to put me in charge.

But I'm ready to retire; I'm going to go teach kids how to garden or whatever. But these ideas are there. And I wanted to take the opportunity to express my appreciation for what your project and thesis work is in terms of pulling together these ideas from hopefully lots of other people so someone can sift through all of them and look for this way forward. But also your work that you've done on looking at the history of organic and writing about it in clear, concise,

understandable ways, so that people can see all these pieces, because that really has helped me to understand the history of where we came from and then figuring about where we need to go next.

AA: Oh, thank you for all that. So I do have a question I'm curious about. When you were, back to MSU when we were talking about that, you mentioned something about how GMOs may be one of the reasons that a lot of academics are either opposed or else not interested in organics, because organics are of course not GMO, and then molecular biology seeming to be the trend that a lot of university research is taking. I mean, even the whole, the newest building at MSU is the Molecular Plant Sciences, and the whole building devoted to something that maybe is not necessarily compatible with organic agriculture. I'm curious if you think that may be one of the reasons that it's not as broadly accepted at the university as it could be.

JB: Short answer, yes. I mean, that's what I'm proposing, is something that others need to question and look at. It's the same way when I talk about leadership versus administrators. That's my perspective based on my experience. And what we have to do is put that out there and see, do other people say, "No," or do they say, "Yes," do you build on that? And I'm saying, I think the GMOs and the whole thing, there's some really good people at MSU that are working on trying to provide better germplasm and using a variety of techniques, including genetic engineering. And I think they're well-intentioned. But I just would question how much of this is being overly influenced by patents, and by exclusive rights.

It's like, there was, a couple years ago at MSU there was a group, and I heard about this meeting, and they were going to be looking at helping farmers with seeds, particularly in Africa was going to be the focus. And they brought a bunch of people together. And I was really excited because I thought they were going to be teaching about seed saving and helping farmers. No, it was more just the opposite. They were talking about how to have farmers *not* save seeds, and how to set up structures and organizations to make sure that the seed is there and that it's the right seed. I just like, all I could do is exhale deeply. At that point I was still, I didn't really even try to speak up in the meeting to question it. It's like, I'm trying to learn how to save seeds and to teach other people how to save seeds, because that just makes so much sense to me. But there's this other movement of trying to own or control the seeds.

And again, I think there's a lot of good people that are trying to, they think they are doing something good, but I don't think they see the underlying implications of what's going on with this process of being in control of food. It's been about controlling people by controlling their food for thousands and thousands of years. I remember Eliot talking about it, have we really grown much from being serfs? And it's like, I reflect on that in my reading, and I just think that, I think he's right. I think a lot of people are still just serfs. And I think in the university they're not really preparing students to think and to be problem solvers. They are preparing them to be serfs, and they're charging them a heck of a lot of money.

That's my other rant that I make regularly now, is that from where I started 35 years ago, they're charging more than ten times the amount of money per credit, and teaching overall in a degree, I would say that the students are getting half to a third or less of the information that they did when I started 35 years ago. And I was not the most popular teacher because I made people work their ass off, like I taught like I wanted to be taught. I taught to the smartest person in the classroom that was in the front row that really wanted the information. And I learned that not everybody is like that, and I learned how to teach to that everyone could be successful in the course no matter what they wanted. But I still set the bar high and made people work. And my

reviews would come back, “Well, it’s twice as much work for a same-credit course, Biernbaum, what does he think he is?” And it’s like, “Well, I’m trying to give you your money’s worth.” But it's just like, who are we, where are we coming from? (1:27:12)

And back in my other, this point that I make is going to make the connection to this. The whole GMO thing, and again people controlling food, and why do we do the way we do? I want to mention one more book that came to me at just the right time. Quinn actually mentions it in the very last pages of *My Ishmael*. And it’s called *The Chalice and the Blade* by Rianne Eisler. And it’s called *Our Future*, and she goes again back and really looks at, how did we get to this point of being so fearful and so greedy and so militaristic? And looks at the history of more the druids and the indigenous peoples around the world and speculates about the archaeological evidence that was often interpreted by men and done in a very patriarchal way, and then interpreting it differently, and why are societies patriarchal or matriarchal, and are we close to the earth or not close to the earth? And she looks at the invasion of the Mongolian hordes coming in and how that changed things by the warrior view of the weapons and the horses, and the more earthly view.

Again, it takes a little time to get through all that stuff, but it helps me to see how we kind of got to this point, this greedy, selfish point, which GMOs can be sold as saving the world, but it’s not. It’s just clearly is not the direction that’s going to do that, it’s more the diversity. And things like Vandana Shiva, and speakers like that, there’s a movie coming out I think about her soon that I’m excited to see. But how, you’ve got to pick a case study. So the GMOs, to answer your question more specifically, might be a really good case study. But in the same way, looking at the livestock, looking at the organic hydroponics, these are other case studies where if you just wait for legislators to do it, it’s just not going to happen, because they just don’t have the knowledge and the experience that we need. But how do we get people to have some of these discussions in a non-fearful, non-confrontational way, which again is a very big if these days because we don’t know how to communicate and speak together, and that’s only getting worse and worse. If you can’t agree on some level of historical interpretation of information, it’s just going to make this even more difficult.

But yeah. GMOs and seed sovereignty and rights to things, rights to land like I brought up, and urban agriculture, which I’ve had an opportunity to work here in Michigan in Flint and Detroit, and I’m so honored to be a part of that as they try to take back their access to the land and the food and their culture and things that were taken away forcefully that never should have been taken away, and going back and appreciating the human diversity as well as diversity in general. We’ve got a lot of work to do. (1:31:05)

AA: Thank you. Is there anything you want to share, we’ve got about 15, 20 minutes left, about your involvement in organic organizations, anything you want to share about that?

JB: Thanks for the opportunity to do that. And again, what first comes to mind is reiterating a little bit about what I’ve said all along about how thankful I am of people that helped me. And that’s where it’s challenging to keep some of these organizations going now, because there are so many different organizations that are asking for money and are trying to do it and trying to do education. And there’s a limited number of dollars. And having just finished as being on the MOFFA board of directors since 2009, and I was actually really more involved since the early 2000s with the Michigan Organic Conference, but since 2009 I have been the chair of the education committee for MOFFA, and for a few of the years in there I was chair of the board of

directors. And seeing the challenges and the work that's necessary to get people to be involved, it's like, our board is a voluntary board, although we worked really hard to have a paid position, which was really important to keep the continuity there, and to have somebody that could do the extra legwork and be paid for it.

The organizations, it's just, farmers and the people that are interested in organic are out there doing the legwork. It's very difficult for them to also have time to do the organizational work. And it's like, we need some kind of a strategy to try to do that. There are some, organizations are getting some grant money, but that seems to be shrinking. You can put on educational conferences, either online or in-person we'll go back to, but that's difficult to make very much money at, it's more of a break-even kind of experience the way you have to pay for the facilities and pay for good food and things like that. So I just stepped off of the board of MOFFA because I felt like I needed to move on to other things. But I ended somewhat being frustrated, not sure of the future or how are these organic organizations going to continue. And I hope there are people better prepared to address that issue than I am, and I hope you get to interview them, and I hope you get to find more answers to that, because I think again that's a concern, a very big concern. I just am not seeing the answers. I'm finding that, I like to do stuff and I like to build stuff and do new things, and I can be attentive to detail at times, but I'm not that person that can really keep an organization going. You need somebody that is good at *that* skill set, and then they need somebody like me that can get things done to be a part of the team. So it's like, how do we keep organizations, keep organic going?

I look at the Real Organic Program, that's something that is just truly great, an effort by people that are really motivated to doing this, to keep it going. And they try to come up with solutions. And we need that, but we also need some ideas of how to make these organizations sustainable and that people can still have a quality of life where you're not just putting it all out there between your job and the things you're passionate about, and you don't have enough time for yourself or for your health and your family. And I think that's the risk of where we're at now in organic, we just can only do so much. And I'm stepping back, I have two grandchildren now, one is four and one just turned one, and wanting to spend time.

But maybe here's another question to ask: Where are the youth? I mean, I'm asking the question, at the student organic farm over the past ten years we've trained–prepared, I don't like the word trained—prepared and worked with dozens, more than a hundred students that are out there and doing their farms, and it's like, you kind of need some of them to come back and be involved in MOFFA and the educational efforts and the directions. But I also have been to their farms recently and look at them and I see how hard they're working, and it's just like, I don't see the answer. How do young people have enough time to generate enough income to have a family and meet their own goals and then still be a part of these societal goals. We need some creative new ideas here. Again, it's got to kind of come back on the younger people. Well, a combination of younger people and people with more experience to say, what can we do going forward? And I'm very concerned about it. But I am not seeing the answer yet. I'm trying to do what I think I can do, which is help get more people excited and involved and passionate. Again, it's back to what you're doing, trying to gather this information and see who has the solutions on that. I hope you're finding better answers than what I'm able to give on that one. (1:37:36)

AA: I'm just collecting all the different perspectives, and then I'll put them all together at the end. Yeah, I think we've covered most everything, unless there's something else you want to talk about, like the most important aspects of this history to preserve and to teach to those younger

people that you were talking about. And if there's something that I didn't specifically ask and you want to talk about, go ahead. This is the time to do that.

JB: Just a thought, I think we've done, I feel good about what we've covered and everything, we can stop there. I just see one thing, a thought to close on. I was just sharing with some people that I'm helping with trying to develop ideas, and you know when you're trying to develop a farm and you're trying to develop the routine stuff, the maintenance stuff, the day-to-day things that have to be done, planting, weeding, harvesting, but you're also trying to do infrastructure stuff, that it's hard for one person to have to do both. If you can have a team, those that are better with the routine stuff, those that are better with the infrastructure, with the new stuff, then you can be growing things. And it kind of relates to that understanding.

With organic, I have written down the talk at one point about the difference between organic by default and organic by design. I was frustrated in my permaculture course last month where the instructor said that, as a comment about organic, that organic is mostly just not using pesticides and fertilizers. And it's like, I let it go the first time, and the second time I said, "That's just not acceptable to be saying that in a public forum, there's still people saying that, but it's just not true." And in class the way I try to help the students understand it is that there's organic by default, so if you go to countries that don't have access to inputs and they're trying to do the best they can with what they have, and to manage the soil, and they're not using pesticides and they're not using fertilizers, mostly because they can't afford them and they don't have that, some people would point to that and say that's organic. And I would say, no, that's organic by default, but that's not the organic that is making people be successful and where we're seeing these increased yields and increased plant health without pesticides and soil that's resilient and soil that can absorb water. That's all being done with organic by design.

And organic by design has all these levels of managing organic matter, managing the different types of organic matter, understanding water, understanding all these different components of farming that you have to be able to bring those pieces together to really make it successful. So if we say, as a round number, the number used to be 10,000 certified organic farms in the US, I know it's more than that, it's probably 15 now, but let's just use 10,000 as a round number. It's like, how many of those farms are more beginning organic and they're certified and they're learning organic, versus how many of them are really the ones that have the experience and that are really making it work? I would be generous, and let's say ten percent, maybe a thousand of those ten thousand farms are really doing it well, and a hundred of those, 1 percent of them are really doing it really well. That's the farms we should be studying and observing and writing about. That's a lot of what trade journals, publications like *Acres* and other information is doing, holding these really successful farms up and seeing how this integral nature of all that they're doing from the soil to the production to the marketing, and you've got to have diverse marketing, is necessary to make it all work. That will be a big closing.

Back in the day when we were starting the student organic farm, I put together, I learned to keep it simple in like four main principles, and one time there was a young woman and her mom from Wisconsin coming to see the farm and thinking about whether they wanted to be in our educational program. But I went through these four things, I said, what we're learning is, what you really need to have, number one is build soil organic matter. And there are many different ways to do that, and there are different types of organic matter, but that's a real, one key thing we talked about how to do that through cover crops and compost and green manures and roller crimpers and all these different methods.

Two would be producing diverse crops, or having a diverse palette on the farm. I mostly know more about crops, but I recognize how important integrated livestock can be. And you want a diversity of things, but you have to be careful not too many diverse things, because new farmers often get into trouble by trying to do too many things at once. But we're moving toward more diverse things.

And then I'm big on season extension, so one of my four things is learning how to spread the work across the season. How, you don't necessarily have to be a four-season farm, but how to use the seasons so you're not killing yourself in the summer working 16 or 17-hour days, you're spreading it more out.

And then the fourth one would be more having diverse marketing strategies. I used to say direct marketing strategies, because that was the emphasis I was learning in the beginning, so through CSA or farmers' market where you're connected to your clientele or the people that are buying. But diverse is really a better way of saying it, because sometimes wholesale makes sense for your crop, or this makes sense.

So I got done describing those four things. And she said, the girl looked at me and said, "Wow, the farms I was visiting in Wisconsin the last couple weeks, they said exactly the same things!" I said, "Yeah, I know, I visited those same farms 20 years ago, and that was what I was listening to." These things are there. And it's just like, whether you're an established farmer or a beginning farmer, it's distilling this information down and looking for the key things and having that as a guide, and then taking care of yourself.

You can see, I'm still at the end, I'm still the teacher. I have ideas to share, and I appreciate the opportunity to share these. And I hope that others get to take advantage of them.

AA: Well thank you so much! And we'll probably end this unless there's something else you wanted to say.

JB: I think we'd better stop there.

AA: All right. Well thank you very much!

JB: You're welcome. Thank you. (1:45:07)